

REMARKS/ARGUMENTS

Claims 8-14 are pending in this application. By this Amendment, Applicants amend the specification and Claim 8.

Applicants appreciate the Examiner's indication that Claim 13 would be allowable if rewritten in independent form including all of the features of the base claim and any intervening claims.

The specification was objected to for containing informalities. Applicants have amended the specification to correct the informalities noted by the Examiner. Accordingly, Applicants respectfully request reconsideration and withdrawal of this objection.

Claim 1 was objected to for containing informalities. Applicants note that it appears that the Examiner intended to object to Claim 8, instead of Claim 1, because (1) Claim 1 was canceled in the Preliminary Amendment filed on June 22, 2005, and (2) the term "bimorph," which the Examiner objected to, was recited in Claim 8. Applicants have amended Claim 8 to correct the informalities noted by the Examiner. Accordingly, Applicants respectfully request reconsideration and withdrawal of this objection.

Claims 8, 10-12, and 14 were rejected under 35 U.S.C. § 102(b) as being anticipated by Tabota (US 2002/0047700). Claims 8-11 were rejected under 35 U.S.C. § 102(e) as being anticipated by Paros et al. (US 2002/0166379). Applicants respectfully traverse the rejections of Claim 8-12 and 14.

Claim 8 has been amended to recite:

An acceleration sensor comprising:
a base plate; and

first and second resonators each including a piezoelectric material and each having electrodes on two opposite main surfaces thereof, each of the first and second resonators having a vibrating section at an intermediate portion of the resonator with respect to the longitudinal direction thereof; wherein

the first and second resonators are attached to opposite sides of the base plate with respect to a direction in which acceleration is applied so as to define an acceleration-sensor element, **only one longitudinal end of the acceleration-sensor element is fixed and the other longitudinal end of the acceleration-sensor element is free such that the first and second resonators bend in the same direction in response to the acceleration**, and changes in frequency or changes in impedance in the first and second resonators caused by the bending of the acceleration-sensor element are differentially detected in order to detect the acceleration, the acceleration-sensor element is bendable about a central bending plane in response to the acceleration, the central bending plane being positioned at a central portion of the base plate with respect to the application direction of acceleration, and **the vibrating section of each of the first and second resonators is disposed closer to the fixed longitudinal end than the to free longitudinal end of the acceleration-sensor element.** (emphasis added)

With the unique combination and arrangement of features recited in Applicants' Claim 8, including the features of "only one longitudinal end of the acceleration-sensor element is fixed and the other longitudinal end of the acceleration-sensor element is free such that the first and second resonators bend in the same direction in response to the acceleration" and "the vibrating section of each of the first and second resonators is disposed closer to the fixed longitudinal end than to the free longitudinal end of the acceleration-sensor element," Applicants have been able to provide a compact, high-sensitivity acceleration sensor that is not affected by factors other than acceleration, such as a change in temperature or other factors (see, for example, the first full paragraph on page 3 of the Substitute Specification).

The Examiner alleged that each of Tabota and Paros et al. teaches all of the features recited in Applicants' Claim 8.

Applicants' Claim 8 has been amended to recite the features of "only one longitudinal end of the acceleration-sensor element is fixed and the other longitudinal end of the acceleration-sensor element is free such that the first and second resonators bend in the same direction in response to the acceleration" and "the vibrating section of

each of the first and second resonators is disposed closer to the fixed longitudinal end than to the free longitudinal end of the acceleration-sensor element.” Support for these features is found, for example, in the paragraph bridging pages 10 and 11 and the first full paragraph on page 13 of the substitute specification.

In contrast to Applicants’ Claim 8, as clearly shown in Fig. 2 of Tabota, **both ends** of the acceleration-sensor element 3, 4, 5 of Tabota are fixed. Tabota fails to teach or suggest that the acceleration-sensor element could or should be fixed at only one end with the other end being free. Thus, Tabota certainly fails to teach or suggest the feature of “only one longitudinal end of the acceleration-sensor element is fixed and the other longitudinal end of the acceleration-sensor element is free such that the first and second resonators bend in the same direction in response to the acceleration” as recited in Applicants’ Claim 8.

In addition, since the acceleration-sensor element of Tabota is fixed at both ends, Tabota cannot possibly teach or suggest the feature of “the vibrating section of each of the first and second resonators is disposed closer to the fixed longitudinal end than to the free longitudinal end of the acceleration-sensor element” as recited in Applicants’ Claim 8.

Furthermore, as shown in Fig. 9B of Paros et al., the vibrating section of each of the first and second resonators 158b, 160b defining the acceleration-sensor element, are located **at the center portion** between the ends thereof, and is certainly not located closer to a fixed end thereof. Thus, Paros et al. clearly fails to teach or suggest the feature of “the vibrating section of each of the first and second resonators is disposed closer to the fixed longitudinal end than to the free longitudinal end of the acceleration-sensor element” as recited in Applicants’ Claim 8.

Finally, neither of the resonators 158b or 160b of Paros et al. includes electrodes disposed on two opposite main surfaces thereof. In fact, Paros et al. fails to teach or suggest anything at all about electrodes of the resonators 158b and 160b. Thus, Paros et al. certainly fails to teach or suggest the feature of “first and second resonators each

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including a piezoelectric material and each having electrodes on two opposite main surfaces thereof" as recited in Applicants' Claim 8.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of Claim 8 under 35 U.S.C. § 102(b) as being anticipated by Tabota, and the rejection of Claim 8 under 35 U.S.C. § 102(e) as being anticipated by Paros et al.

In view of the foregoing amendments and remarks, Applicants respectfully submit that Claim 8 is allowable. Claims 9-14 depend upon Claim 8, and are therefore allowable for at least the reasons that Claim 8 is allowable.

In view of the foregoing amendments and remarks, Applicants respectfully submit that this application is in condition for allowance. Favorable consideration and prompt allowance are solicited.

To the extent necessary, Applicants petition the Commissioner for a One-Month Extension of Time, extending to July 31, 2006 (July 30, 2006 falls on a Sunday), the period for response to the Office Action dated March 30, 2006.

The Commissioner is authorized to charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1353.

Respectfully submitted,

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